KUZMAK, Ye. M.; KROSHKIN, V. A.

Reaction of improved 12MKh and 12KhMF steels to the thermal cycle in welding. Avtom. svar. 15 no.11:44-50 N '62. (MIRA 15:10)

1. Institut neftekhimicheskoy i gazovoy promyshlennosti imeni I. M. Gubkina.

(Steel—Welding) (Thermal stresses)

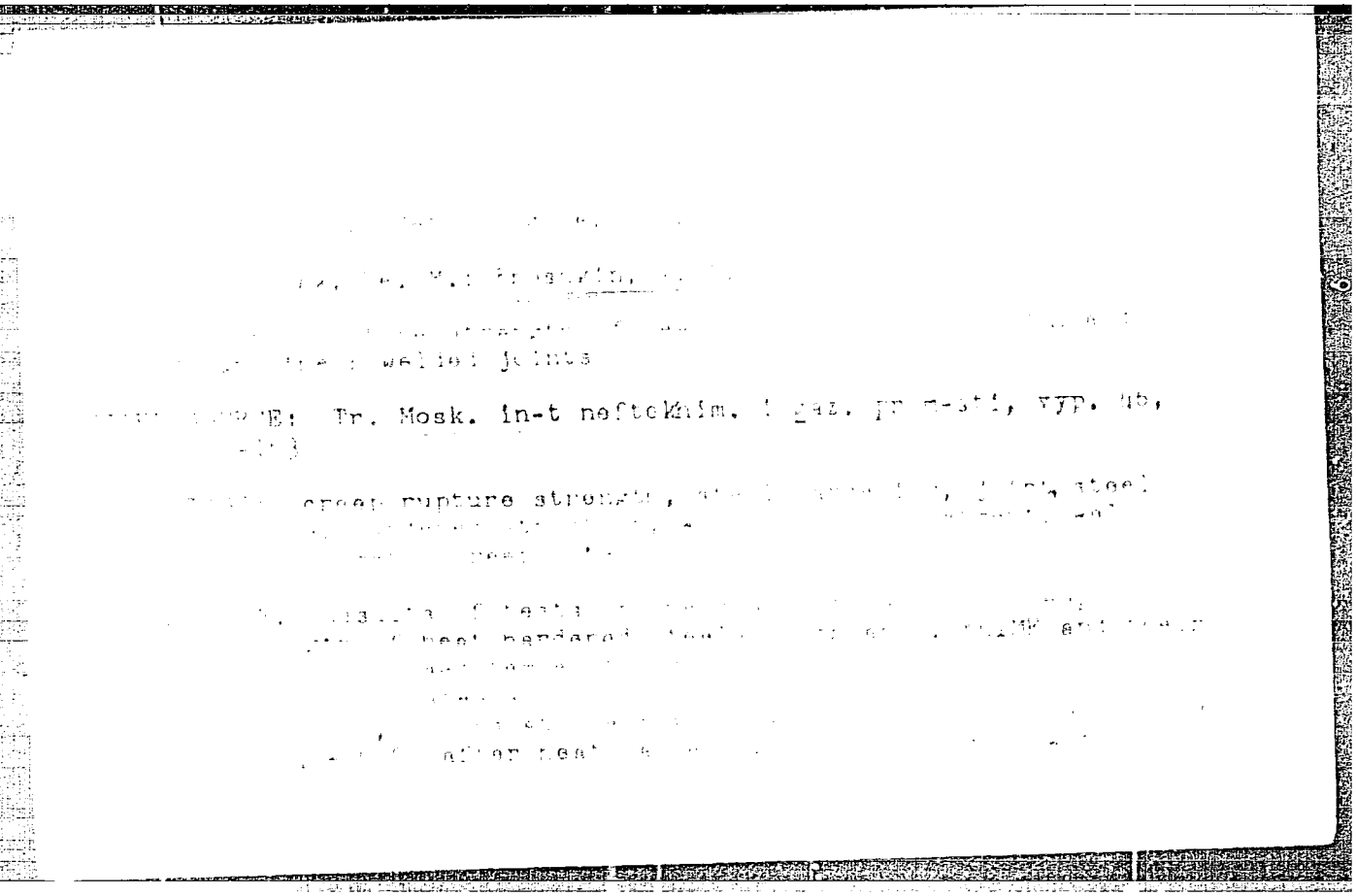
6

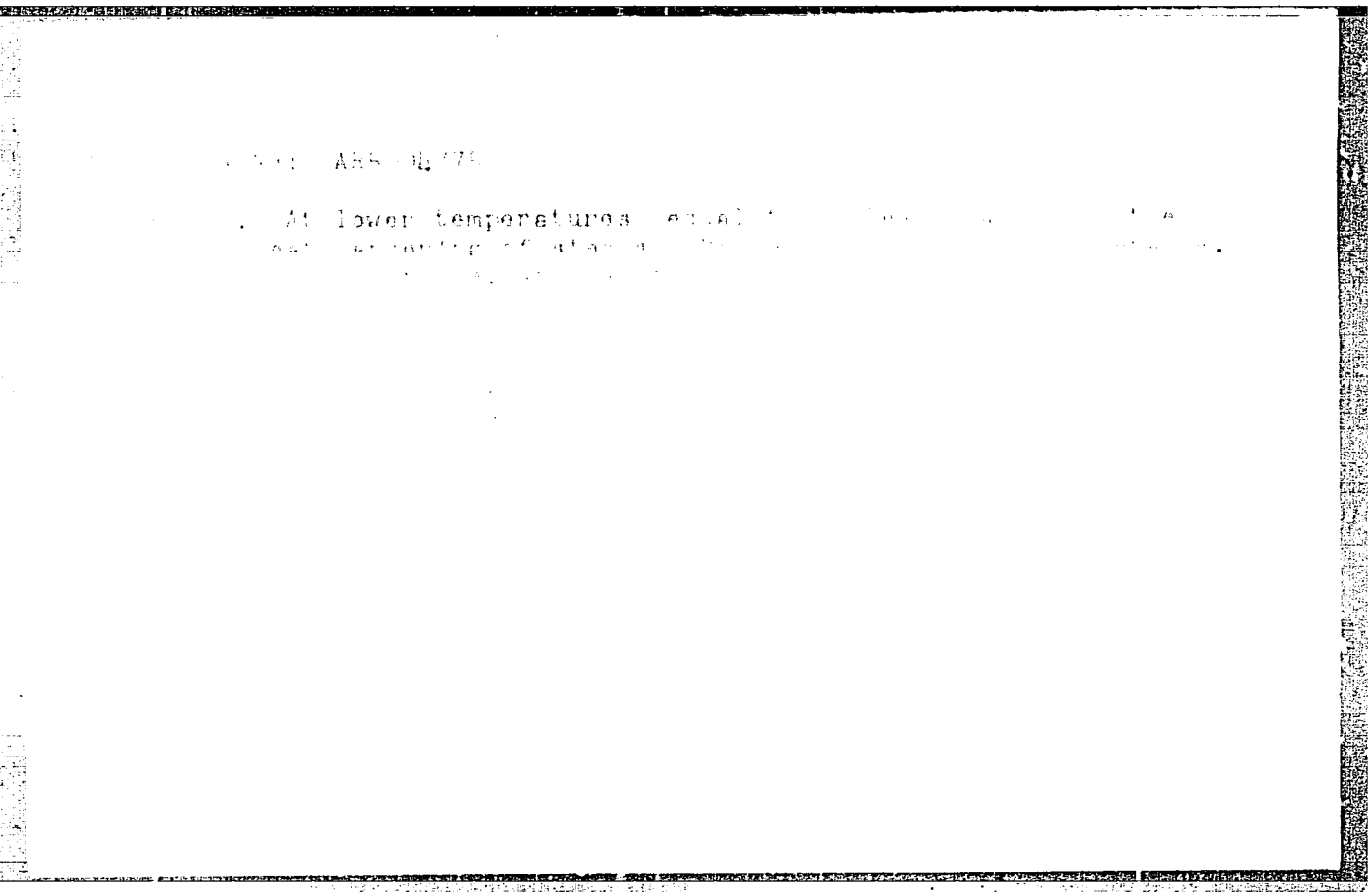
KUZMAK, Ye.M., doktor tekhn.nauk; MILANCHEV, V.S., kand.tekhn.nauk; KROSHKIN, V.A., inzh.; SUVOROVA, V.I., inzh.; SERGEYEV, S.I., inzh.; BARYSHEV, S.P., inzh.; Prinimali uchastiye: SHCHERBACHENKO, S.V., inzh.; PALATNIKOVA, Ye.S., inzh.

Testing 14GN steel for thermal strengthening and weldability. Stroi. truboprov. 7 no.12:13-14 D '62. (MIRA 16:1)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. akademika Gubkina (for Kuzmak, Milanchev, Kroshkin).
2. Chelyabinskiy truboprokatnyy zavod (for Suvorova, Sergeyev, Baryshev).

(Steel—Testing)





KRESTOV, G.A.; KROSHKIN, V.I. (Ivanov)

Device for the synchronous start-up of a stop watch and an electric circut. Zhur. fiz. khim. 35 no.3:670 Mr '61. (MIRA 14:3)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.
(Electric relays) (Electric switchgear)

GURTOVOY, N.N.; IL'ICHEV, V.D.; KROSHKIN, V.I.

Adaptive characteristics of the skin of the external part of the acoustic analysor in birds. Zool. zhur. 44 no.2: 304-306 '65. (MIRA 18:5)

1. Moskovskiy gosudarstvennyy universitet.

[redacted]

New ideas on the systematics of shrikes. Zool. zhur. 44 no.7: 1041-1047 '65. (MIRA 18:9)

1. Kurganskiy gosudarstvennyy pedagogicheskiy institut.

KROSHKO, A.N., inzh.

Using ultrashortwave radio communications in constructing pipelines.
Stroi. truboprov. 6 no. 1:3-6 Ja '61. (MIRA 14:2)
(Radio, Shortwave) (Pipelines)

KROSHKO, A.N.

New equipment for communication systems of gas pipelines. Gaz. prom. 10 no.8:47-50 '65. (MIRA 18:9)

BUTAYEV, O.A.; IVANOV, S.K.; KROSHKO, A.N.; MASKEVICH, V.D.

Investigating gas pipelines as radio wave guides. Gaz. prom. 7 no.6:43-48 '62. (MIRA 17:6)

ISAKOVA, A.A., inzh.; KROSHKO, A.N., inzh.

Organization of communication to control gas conduits in Italy. (MIRA 14:9)
Stroi. truboprov. 6 no.9:31-32 S '61.
(Italy--Pipelines--Communication systems)

KROSHKO, A.N., inzh.

Buildings for the equipment of the radio relay communication line. Stroi. truboprov. 7 no.12:11 D '62. (MIRA 16:1)
(Pipelines—Buildings and structures)

KROSHKO, A.N.

Using pipes of gas pipelines as electrical communication lines.
Gaz. prom. 10 no.7:43-46 '65. (MIRA 18:8)

KROSHKO, M.T., mayor meditsinskoy sluzhby

Prevention of barotrauma of the ears in submarine personnel. Voen.-med. zhur. no.8:64-66 Ag '61. (MIRA 15:2)
(SUBMARINE MEDICINE) (EAR--WOUNDS AND INJURIES)
(ATMOSPHERIC PRESSURE--PHYSIOLOGICAL EFFECT)

NIKOLAYEV, V.; KROSHNEV, A. (Temir-Tau); VLODOV, P., inzh. (Ostrogozhsk, Voronezhskoy obl.); BOGDANOV, A. (Arkhangel'skaya obl.); ZHEMOCHKIN, G.; RENKOV, V. (Riga); KALININ, V. (Riga); GVASALIYA, Sh.; DIDIK, A. (Lakhdenpokh'ya, Karel'skoy ASSR); SINEL'NIKOV, A.

Advice of specialists. Za rul. 20 no.12:20-21 D '62. (MIRA 15:12)
(Motor vehicles)

KROSHUNOV, A.

CA

3

Rotational vibrations of molecules in crystal lattices of organic substances and scattering spectra. E. Gross and A. Kroshunov. *Acta Physicochim. U.R.S.S.* 20, 453-62 (1945)(in English). Scattering spectra for *o*-, *m*-, and *p*-diiodobenzene are reproduced photographically for the Hg 4047- and 4078-A. lines. Sharp lines, displaced from the exciting line by 137 cm.$^{-1}$ or less, are obtained (cf. *C.A.* 34, 941[8]). Similar data is tabulated for the following compds.: *p*-dichlorobenzene (α-modification) 27.5, 45.5, 54.0, 93; *p*-chlorobromobenzene 22.4, 42.5, 94; *p*-dibromobenzene 20.1, 37.8, 93. For the last four compds. regularities in the low-frequency spectra indicate that the spectra are due to the rotational vibrations of the mols. in the crystal lattices. Polarization expts. led Nedungadi to the same conclusion (C.A. 37, 1655[9]).
Oscar T. Quimby

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

VRCELJ, Stefanija; KROSIN, Jelisaveta

Discontinued prolonged prednisone therapy of 2 cases of nephrotic syndrome. Srpski arh. celok. lek. 91 no.9: 859-863 S'63.

1. Interna klinika A Medicinskog fakulteta Univerziteta u Beogradu. Upravnik: prof. dr. Branislav Stanojevic.

KROSLAK, V.

"New health resort in Nosice."

KRASY SLOVENSKA. (Poverenictvo dopravy. Riaditelstvo pre cestovny ruch) Bratislave, Czechoslovakia, Vol. 36, No. 5, May 1959.

Monthly List of East European Accessions (EEAI)\ LC, Vol. 8, No. 8, August 1959.

Krosňák, V.

CZECHOSLOVAKIA / Virology. Viruses of Men and Animals. E-3

Abs Jour: Referat Zh.-Biol., No 6, 25 March, 1957, 21755

Author : Zhuffa, Shkoda, Krosňák, Mikhalek, Baumgertner
List :
Title : The Production and Evaluation of Effectiveness of an Immunizing Serum Against Newcastle Disease in Domestic Fowl.

Orig Pub: Veterin. casop., 1956, 5, No 1, 22-30

Abstract: The avirulent strain N (Hertfordshire) was used to prepare the serum. The antigen was prepared on an allantoic-amniotic liquid of 11 day-old hen embryos. The eggs were opened 48 hours after infection. Hemo-agglutinating titer was 1:256-1:1024, and the infection titer $\sim 10^{-8}$. Hyperimmunization was conducted on Leghorn hens and turkeys. Three virus injections were carried out at intervals of 14 days. The first injection of 0.2 ml in a dilution of $2 \cdot 10^{-2}$; the 2nd, 0.5 ml in a dilution of $5 \cdot 10^{8.5}$; the 3rd, 2 ml of concentrated liquid ($20 \cdot 10^{8.5}$) (in an abbreviated hyperimmunization me-

Card : 1/2 -3-

CZECHOSLOVAKIA / Virology. Viruses of Men and Animals. E-3

Abs Jour: Referat Zh.-Biol., No 6, 25 March, 1957, 21755

thod, the first injection was omitted.) 14 days before the last injection, 25 ml of blood for obtaining the serum were collected from each fowl. The evaluation of effectiveness was tested on white Leghorns weighing 300-400 g (without indications of disease and parasitic invasions), which were injected with 10 million DL virus 245-5-6 and simultaneously 0.1-3.0 ml immune serum. All the fowl which received 0.1 ml of serum, died on the 4-6 day after infection; of those which received 0.25 ml, 50% died by the 8th and 10th day. Birds who received 0.5 ml of serum or more remained alive after a short illness.

Card : 2/2 -4-

HORVÁTH, J., DVM; KROŠLÁK, V., DVM.

Czechoslovakia

Brno, Veterinářství, No 12, 1962, pp 359-361

"Peroral Immunization of Poultry against Plague with Roakin Vaccine."

2

KROSNAR, Josef

The 12th Congress of the Communist Party of Czechoslovakia and the tasks of the food industry. Prum potravin 14 no.1:1-2 Ja '63.

1. Ministr potravinarskeho prumyslu, Praha.

KROSNAR, Josef

1963, the starting point for the performance of decisions of the 12th Congress of the Communist Party of Czechoslovakia. Kvasny prum 9 no.1:1-2 Ja '63.

1. Ministr potravinarskeho prumyslu.

KROSNAR, Josef

On the threshold of 1963? Listy cukrovar 79 no.1:1-3 Ja '63.

1. Ministr potravinarskeho prumyslu.

LAPINSKA, Jozefina; oraz wspolpracownicy: BANASZKIEWICZ, Halina; STALINSKA, Elzbieta; DOBRUCKA-KOKINSKO, Ewa; KALINOWSKI, Jan; KROSNIAK, Franciszka; GWOZDZ, Jozef; LUTZ, Hanna; LUTZ, Jerzy; DWORAK, Wlodzimierz; NARUSZEWICZ, Wanda

The efficiency of occupational rehabilitation in sanatoria for young people. Gruzlica 33 no.4:323-332 Ap '65.

1. Z Zespolu Nadzoru Specjalistycznego Instytutu Gruzlicy (Kierownik: lek. A. Kwiekowa) (for Lapinska). 2. Sanatorium w Lagiewnikach (for Banaszkiewicz, Stalinska). 3. Sanatorium im. Okrzei w Otwocku (for Dobrucka-Kokinsko, Kalinowski). 4. Sanatorium w Istebnej (for Krosniak, Gwozdz). 5. Sanatorium w Dziekanowie Lesnym (for H. Lutz, J. Lutz). 6. Sanatorium w Dzierzaznie (for Dworak, Naruszewicz).

MA[illegible], Grazyna; KROC[illegible]IAKOWA, Franciszka

Cytological picture of bronchial smears in pulmonary tuberculosis in children and adolescents. Gruzlica 33 no.8:721-725 Ag '65.

. Z Sanatorium Przeciwgruzliczego dla Dzieci i Mlodziezy w Istebnej (Dyrektor : lek. med. G. Mazur).

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826630007-9"

[redacted]

[redacted], P.

"Let us Preserve the Grain in Storehouses One Percent Per Cent", P. 19, (KOOPERATIVNO ZEMEDELIE, Vol. 7, No. 7, 1954, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 1, Jan. 1955, Uncl.

POMERANTSEV, A.M., kand. tekhn. nauk; KROSTELEV, Yu. V., inzh.

Precast reinforced concrete bridges with supports of a new type.
Transp. stroi. 8 no.1:5-8 Ja '58. (MIRA 12:12)
(Bridges--Foundations and piers)

KROSTELEV, Yu.V., insh.

Designs of precast bridge supports and over-all mechanization of their erection. Trudy MIIT no.122:313-327 '59.
(MIRA 13:5)
(Railroad bridges) (Precast concrete construction)

USSR/Biology - Physiology FD-2276

Card 1/1 Pub 33-7/18

Author : Khanne, N.; Krostev, K.; and Iliyev, I.

Title : Towards the physiology of the inhibitive process

Periodical : Fiziol. zhur. 40, 579-581, Sep-Oct 1954

Abstract : In order to determine physiological effects of the "false start" on athletes engaged in competitive sports, investigated changes in pulse rate and respiration (ventilation, gas exchange) resulting from above-mentioned situation under controlled laboratory conditions. Tables. One reference. (USSR, 1947).

Institution: Central Scientific-Research Institute of Physical Culture, Sofiya

Submitted : June 19, 1954

KHANNE, N.; KHRISTEV, K.; ILIYEV, I.

Physiology of starting conditions. Teor. i prak. fiskul' 18 no.7:540-546 '55. (MLRA 8:10)

1. Tsentral'nyy nauchno-issledovatel'skiy institut fizicheskoy kul'tury, Sofiya.
(ATHLETICS, physiology,
cyclist's pulse & metab. during starting of competition)
(PULSE,
in cyclist during start of competition)
(METABOLISM,
in cyclist during start of competition)

KROSZCZYNSKI, J.

"Some Properties of Modulation", p. 341, (PRZEGLAD TELEKOMUNIKACYJNY, Vol. 27, No. 11, Nov. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 5, May 1955, Uncl.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826630007-9"

POLAND/Radiophysics - Application of Radiophysical Methods I-9

Abs Jour : Ref Zhur - Fizika, No 4, 1959, No 6500

Author : Kroszczynski J.
Inst : -
Title : Effectiveness of Suppression of Reflections from Stationary Objects in Ordinary and Double Systems of Indication of Moving Targets.

Orig Pub : Prace Przemysl. inst. telekomun., 1958, 8, No 24, 41-46

Abstract : An analysis is made of the effectiveness of suppression of reflections from stationary targets in pulse-coherent systems of moving target indication. The analysis is carried out by spectral and auto-correlation methods. The results are represented in the form of graphs, which make it possible to determine rapidly the suppression of reflections from stationary objects for different system parameters. -- Author's resume

Card : 1/1

AUTHOR: Kroszczynski, Jan, Engineer

TITLE: The Radar Installation on the Okecie Airport Near Warsaw

PERIODICAL: Stiinţă şi Tehnică, Seria a II-a, 1960, Nr 4, p 43

ABSTRACT: The "Avia" radar installation at the Okecie Airport near Warsaw is briefly described. The installation accurately determines the position of any aircraft at a distance of more than 200 km, including the "TU-104" aircraft. "Avia" has more than 500 electronic tubes. The antenna has a special shape which beams the waves in horizontal plane but can also change the beam to the vertical plane. The receiver can detect signals of an intensity of hundred billionths of a watt. The installation is provided with 2 channels, similar to a transmitter-receiver. If one channel falls out the second takes over. A method for neutralizing the persisting echos is applied, which

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D0021/D3001

The Radar Installation on the Okecie Airport Near Warsaw

permits the detection of aircraft in the immediate vicinity of the airport. There is 1 figure

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40131

P/507/60/010/030/001/005
D271/D308

6.4700

AUTHOR: Kroszczynski, J.

TITLE: Surveillance radar for air traffic control, type 'Avia'

SOURCE: Warsaw. Przemysłowy Instytut Telekomunikacji, Prace, v. 10, no. 30, 1960, 51 - 58

TEXT: A new surveillance radar equipment, developed and built by the Przemysłowy Instytut Telekomunikacji (Industrial Telecommunication Institute) and installed in Okęcie airport in Warsaw is described. The design was based on IATA recommendations; video mapping and incorporation of direction finding signals into the radar display were regarded as unnecessary with the present volume of traffic. For constructional reasons, 12 m antenna diameter was chosen and the wavelength is about 22.5 cm. The range is over 200 km, pulse power - 600 kW, pulse length - 3 μsec, azimuth discrimination - 1.4°; antenna radiation pattern in the vertical direction is of cosec^2 type, with a 30° maximum coverage; the antenna sweeps at 3

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or 6 r.p.m. Duplicate equipment is installed and switching over to the stand-by set takes under one minute. Blind spots occurring with the conventional M.T.I. circuits are eliminated by the use of alternating pulse frequencies, 375 and 428 c/s. Air-cooled magnetron is used in the transmitter which can be tuned over a few tens Mc/s; automatic frequency control, with a servo-trimming, is provided, based on a quartz oscillator. The M.T.I. circuit incorporates mercury delay lines, with the same line serving for compensation and synchronization; a more efficient equalizing of the characteristic is obtained by positive feedback in the compensating circuit, and a greater attenuation of echoes from fluctuating objects and a reduction of the antenna rotation effect - by negative feedback. The first blind speed is at 1250 km/hr. Display units have 31 cm screens; the ranges are 60, 120, 180 and 240 km; the time-base origin may be offset by 2.5 x radius. Continuous scan delay control is provided between 10 and 240 km. Electronic azimuth markers are at every 5° and range-markers - at 2, 10 and 50 km. There are 6 figures.

4

SUBMITTED: September 11, 1959

Card 2/2

KROSZCZYNSKI, J.

Modulation of stationary stochastic processes. Przem inst telekom prace 11 no.35:13-15 '61.

KROSZCZYNSKI, J., mgr. inz.

Certain recent achievements in radar. Techn lotn 17 no.6: 175-182 Je '62.

KROSZCZYNSKI, J.

Optimum filters for the detection of coherent signals in correlated noise. Przem inst telekom prace 13 no.39:1-8 '63.

KROSZCZYNSKI, J.

Detection of heavily fluctuating pulse signals in the presence of correlated noise. Przem inst telekom. prace 13:no.41:9-21 '63.

KROSZCZYNSKI, J., mgr inz.

New achievements in the field of flying radiolocation instruments. Techn lotn 18 no.1:11-14 Ja '63.

S/058/63/000/003/083/104
A059/A101

AUTHOR: Kroszczyński, J.

TITLE: On the optimum algorithm of signal reception on the background of correlated disturbances

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1963, 14 - 15, abstract 3Zh86 ("Prace Przemysł. inst. telekomun.", 1962, v. 12, no. 37, 1 - 22, Polish; summaries in Russian, English and French)

TEXT: The problem of optimum signal reception on the background of strongly correlated disturbances is considered. In particular, radar signals are considered on the background of disturbances originating as a result of random reflections, so-called passive disturbances. In the view of the author, passive disturbances are equivalent to a strongly correlated standard noise with the correlation function $R(\tau) = \sum_i a_i \exp(-b_i|\tau|)$ or $\exp(-b\tau^2)$. The assembly of the optimum filter is reduced to the solution of the equation:

$$\int_{t_1}^{t_2} R(t' - t'')q(t')dt' = s(t'')$$

Card 1/2

On the optimum algorithm of...

where s(t") is the probing pulse, and $q(t_0-t)$ the transition function of the filter. A method of solving this equation, based on Fourier's transformation, is given. The block wiring diagrams of optimum receivers are given for the case of unknown Doppler frequency and a target changing in a random way the phase of the reflected signal. There are 135 references.

A. T.

[Abstracter's note: Complete translation]

KRCSZCZYNSKI, J.

Power spectra measurements by analyzers with finite band width.
Przem inst. telekom prace 14 no.46:1-4 '64.

L 00502-66 EED-2 WR

ACCESSION NR: AT5020916 PO/2507/65/000/47-/0011/0014

621.396.96

AUTHOR: Kroszczynski, J. (Kroshchin'ski, Ya.) (Doctor, Engineer)

TITLE: Possibilities for improving efficiency in suppressing fixed reflections

SOURCE: Warsaw. Przemyslowy Instytut Telekomunikacji. Prace, no. 47/48, 1965, 11-14

TOPIC TAGS: radar antenna engineering, pulsed radar, radar interference, radar echo

ABSTRACT: In MTI units which use the coherent-impulse method, one of the main factors which limits the suppression of echos from stationary objects is the scanning motion of the antenna which causes the beam to shift to a slightly different angular position on each pulse. The echo signal therefore varies from pulse to pulse and cannot be completely cancelled. The author discusses some possibilities for reducing this undesirable modulation. One method would be to use stepwise antenna motion, i. e. operation in a series of *M* repeated periods at a fixed antenna direction, then a stepwise change in the directivity pattern by a certain angle, operation in the next series of *M* periods, etc. The disadvantages of this system are

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L 02502-66

ACCESSION NR: AT5020916 2

obviously the increase in scanning time, reduction in accuracy of aximuth measurements and signal losses due to blanking. The author examines a system which operates with two (or more) radiation patterns with angular separation γT_p where γ is the angular scanning velocity in a given plane and T_p is the pulse repetition period. The principle of operation is described and block diagrams of the main circuits are given (see fig. 1 and 2 of the Enclosure). Possible practical applications of the systems are discussed. Orig. art. has: 5 figures, 3 formulas.

ASSOCIATION: Przemysłowy Instytut Telekomunikacji, Warsaw (Industrial Institute of Radio Communications) 55

SUBMITTED: 24Jun64 ENCL: 02 SUB CODE: DC

NO REF SOV: 000 OTHER: 000

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L 01502-66

ACCESSION NR: AT5020916

ENCLOSURE: 01

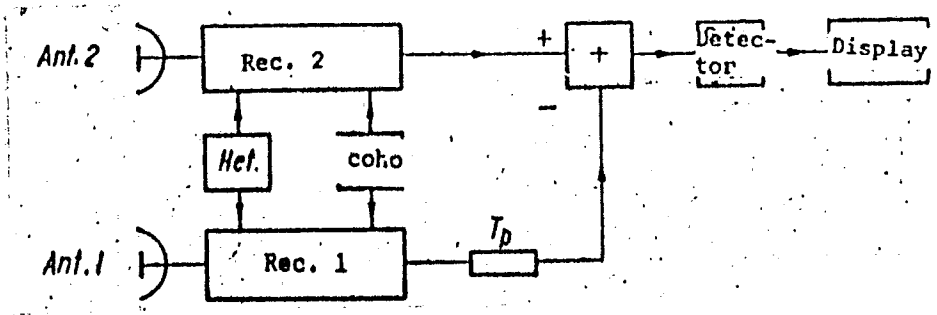

Fig. 1. Block diagram for part of the receiver section in the system for compensating antenna rotation.

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ENCLOSURE: 02

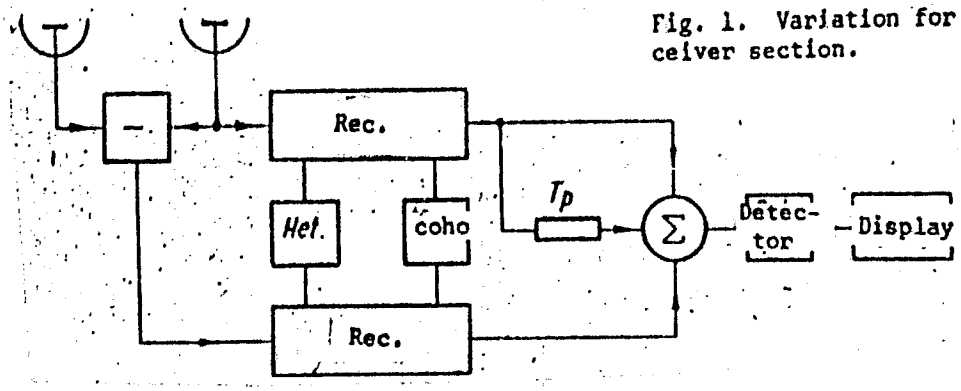

Fig. 1. Variation for the receiver section.

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L 26086-66 FSS-2 WR

ACC NR: AM5025631 Monograph PO/ 41

Kronzczynski, Jan B+1

Damping of fixed radar echoes (Tlumienie ech stalych w radiolokacji) v. 1. Warsaw. PWN, 1965. 221 p. illus., biblio. (At head of title: Instytut Podstawowych Problemow Techniki Polskiej Akademii Nauk) Errata slip inserted. 800 copies printed. Series note: Zagadnienia techniki fal ultrakrotkich, t. 4.

TOPIC TAGS: radar sensitivity, radar detection, radar echo, radar equipment, radar systems, radar interference

PURPOSE AND COVERAGE: This book is intended for scientists and engineers engaged in the design and operation of modern radar systems and the investigation of their potentialities. The author outlines the theory and techniques of attenuation of radar fixed echos. Basic applications and fixed echo attenuation methods and the necessary theoretical principles are discussed. The material has been arranged in such a way that readers with various interests and background may benefit from it. References follow each section and the Appendix.

TABLE OF CONTENTS [abridged]:

Foreword — 7

Ch. I. Basic applications and methods of fixed echo attenuation -- 9

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ACC NR: AM5025631

Appendixes — 203

SUB CODE: 09,17/ SUBM DATE: 00Mar65/ ORIG REF: 039/ OTH REF: 288

Card 3/3

GROSZKOWSKI, Wojciech

New achievements in the chemistry of the Digitalis lanata and Digitalis purpurea glycosides. Farmacja Pol 19 no. 13/14: 277-280 25 Jl '63.

1. Institute of Pharmacy, Warsaw. Deputy head for scient.fic research problems: Doc. dr F. Nantka-Namirski.

ZURKOWSKA, Janina; BUDZYNSKA, Maria; KROSZCZYNSKI, Wojciech; OZAROWSKI, Aleksander

Cardenolide glycosides. V. Studies on a complex of active bodies isolated from Convallaria majalis L. Acta pol. pharm. 20 no.4:329-337 '63.

1. Z Zakladu Związków Naturalnych Instytutu Farmaceutycznego w Warszawie Kierownik Zakładu: dr. A. Ozarowski.
(CONVALLARIA) (CHEMISTRY, PHARMACEUTICAL)

KROSZCZYNSKI, Wojciech; LUKASZEWSKI, Mieczyslaw; ZURKOWSKA, Janina; MARCISZEWSKI, Henryk; OZAROWSKI, Aleksander

Cardanolide glycosides. IV. Production of acetyldigitoxin through selective acetylation of digitoxin. Acta pol. pharm. 20 no.2:121-129 '63.

1. Z Zakladu Zwiazkow Naturalnych Instytutu Farmaceutycznego w Warszawie Kierownik Zakladu: Dr A. Ozarowski.
(DIGITOXIN) (CHEMISTRY, PHARMACEUTICAL)
(DIGITALIS GLYCOSIDES)

GUSTOWSKI, Wlodzimierz; KROSZCZYNSKI, Wojciech; LANGE, Helena

Separation of the glyfoside complex of digitalis purpurea.
Przem chem 39 no.3:175-177 Mr '60.

1. Zaklad Zwiazkow Naturalnych, Instytut Farmaceutyczny, Warszawa

GUSTOWSKI, Wlodzimierz; KROSZCZYNSKI, Wojciech

A simple method of obtaining sparteine sulphate. Przem. chem 39 no.4:231-232 Ap '60.

1. Zaklad Zwiazkow Naturalnych, Instytut Farmaceutyczny, Warszawa

GUSTOWSKI, Wlodzimierz; KROSZCZYNSKI, Wojciech; OZAROWSKI, Aleksander

Obtaining of lanatoside C. Przem chem 41 no.2:84-85 F '62.

1. Zaklad Zwiazkow Naturalnych, Instytut Farmaceutyczny, Warszawa

POLAND

KROSZCZYNSKI, Wojciech, Pharmaceutical Institute (Instytut Farmaceutyczny) in Warsaw (Acting Director of Sciontific Research: Docent, Dr. P. Nantka NAMIRSKI)

"New Achievements in the Chemistry of the Digitalis lanata and Digitalis purpurea Glucosides."

Warsaw, Farmacja Polska, Vol 19, No 13-14, 25 Jul 63, pp 277-280

Abstract: Review article on advances in the chemistry of the glucosides, their structure composed of agluconos and glucoside chain, cardiac activity due to unsaturated lactone, and means of synthesis. Best means of differentiation appears to be the polarity of the aglucones. He shows the configuration of the digitoxigenins, glucose chains, and aglucone rings, and gives a table classifying the 60 known cardioactive glycosides by their aglucones. List of references in possession of the author.

1/1

KRO [illegible], [illegible]; [illegible]

Cardenolid glycosides. VIII. Alkaline degradation of lanatoside C. Acta Pol. pharm. [illegible]:355-358 '64.

1. [illegible] Zakladu Farmakognozji Instytutu Farmaceutycznego [illegible] (Kierownik: doc. F. Krupka).

KROSZCZYNSKI, Wojciech; OZAROWSKI, Aleksander , dr.

Cardenolid glycosides. IX. Evaluation of antifoaming agents with special reference to their use in conjunction with cardial glycosides. Acta Pol. pharm. 21 no.4:359-362 '64.

1. Z Zakladu Związków Naturalnych Instytutu Farmaceutycznego w Warszawie (Kierownik: dr. A. Ozarowski).

CZECHOSLOVAKIA/Electronics - Photocells and Semiconductor Device. H

Abs Jour : Ref Zhur Fizika, No 12, 1959, 27926

Author : Kodes, Jiri; Kroszek, Julius; Slavik, Josef B.

Inst : Technical College, Prague, Czechoslovakia

Title : Optocal Control Over Surfaces of Selenium Rectifiers

Orig Pub : Acta techn. (CSR), 1959, 4, No 2, 132-138

Abstract : A photometric method was used to determine the reflecting ability of the surface of crystallizing selenium as a function of the heating time at a temperature of 140 ±2° C. It is observed that it increases linearly to a maximum, and drops after 10 -- 20 minutes of heating to a minimum, and is again increased and finally remains constant. The entire process lasts 60 minutes. The steady state value of the reflecting ability usually amounts to approximately 8%. Its change

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CZECHOSLOVAKIA/Electronics - Photocells and Semiconductor Device. H

Abs Jour : Ref Zhur Fizika, No 12, 1959, 27926

is connected with the structural and textural changes in the selenium layer. The control of the steady state values of the reflecting ability can be used for quality control of selenium rectifiers during the intermediate stage of manufecture (first heat treatment). -- I.S. Grauberg

Card 2/2

L 23357-66 FSS-2/EEC(k)-2/EWA(d) IJP/TT

ACC NR: AT6005854 SOURCE CODE: PO/0101/65/000/006/0030/0036

AUTHOR: Blagonrawow, Anatol Arkadievicz (Academician); Kroszkin, M. (Candidate of Science)

ORG: none

TITLE: Soviet cosmic studies

SOURCE: Warsaw. Instytut lotnictwa. Biuletyn informacyjny, no. 6, 1965, 30-36

TOPIC TAGS: space environment, satellite

ABSTRACT: The article was written in Russian specially for the Biuletyn by A. A. Blagonrawow, General of the Artillery, (President of the Academy of Artillery Sciences since 1946) and member of the Presidium of the Academy of Sciences of the USSR and the International Astronautical Academy (IIA), and by Candidate of Technical Sciences M. Kroszkin, and translated into Polish. The article gives a review of the main achievements of Soviet science in understanding space since the beginning of space exploration during the International Geophysical Year. During the seven years which have passed since the first satellite was sent into orbit, a large amount of scientific information has been acquired about space conditions which has permitted sending man into space. Fifteen cosmonauts have already orbited around the earth. The significance of the information that has been obtained from space exploration

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L 23357-66
ACC NR: AP6005854

is difficult to evaluate. Its significance is expressed in the thousands of scientific and popular articles that have been written on the subject. Orig. art. has: 4 fig.

SUB CODE: 22/ SUBM DATE: none

Card 2/2

KROT, A.M., kand.tekhn.nauk

Mechanical plotting of axonometric drawings. Izv. KPI 20:308-326
'57. (Axonometric projection) (Mechanical drawing) (MIRA 11:3)

CHALYY, A.T.; KROT, A.K.; YURCHENKO, P.M., red.; SHEVCHENKO, L.I., tekhn. red.

[Mechanical drawing; textbook for grades nine and ten] Cherchenie; uchebnik dlia 9 i 10 klassov. Kiev, Gos. uchebno-pedagog. izd-vo "Radians'ka shkola," 1961. 195 p. (MIRA 15:4)

(Mechanical drawing--Study and teaching)

KISELEV, P.N., starshiy elektromekhanik; KROT, G.R., elektromekhanik;
VAZHNIK, G.S., elektromekhanik; SUZDALEV, N.V., elektromekhanik

Automatic frequency signaling system on hump yards. Avtom., telem.i sviaz' 5 no.7:26-28 Jl '61. (MIRA 14:10)

1. Gomel'skaya distantsiya signalizatsii i svyazi Belorusskoy dorogi.
(Railroads--Hump yards) (Railroads--Signaling)

KROT, I.P., red.; ZAMSHEV, V.I., otvetstv. za vypusk; PETUKHOV, P.I., tekhn. red.

[Economy of Vologda Province; statistical collection] Narodnoe khoziaistvo Vologodskoi oblasti; statisticheskii sbornik. Vologda, Gos. stat. izd-vo, 1960. 132 p. (MIRA 14:6)

1. Vologda(Province)Statisticheskoye upravleniye. 2. Nachal'nik statisticheskogo upravleniya Vologodskoy oblasti (for Krot)
(Vologda Province—Statistics)

RAKHTEYENKO, I.N.; KROT, L.A.

Seasonal rhythm in the growth of active roots of woody plants at different soil depths. Biul.Inst.biol.AN BSSR no.3:157-160 '58. (MIRA 13:7)

(ROOTS (BOTANY))

RAKHTEYENKO, I.N.; KROT, L.A.

Foliar feeding of green plantings in the early spring. Biul. Inst. biol. AN BSSR no.5:82-86 '60. (MIRA 14:7)
(TOMATOES—FERTILIZERS AND MANURES)

RAKHTEYENKO, I.N.; KROT, L.A.

Effect of various methods of watering on the growth of physiologically active roots. Biul. Inst. biol. AN BSSR no.6:56-58 '61. (MIRA 15:3)

(ROOTS (BOTANY))
(PLANTS--WATER REQUIREMENTS)

KROT, L.A.; KOCHANOVSKIY, S.B.; IVANCHENKO, V.M.; ZATEYEVA, R.V.

Soil water balance for urban tree planting. Biul. Inst. biol. AN BSSR no.6:72-76 '61. (MIRA 15:3)
(TREE PLANTING)
(SOIL MOISTURE)

BAKHTEYENKO, I.N.; [illegible]OVSKIY, S.B.; KROT, L.A.

Effect of soil moisture balance on the growth and condition of woody plants. Bot.; issl. Bel. otd. VBO no.5:205-210 '63. (MIRA 17:5)

YAKUSHEV, B.I.; KROT, L.A.

Effect of the herbaceous soil cover on the growth of pine plantations. Bot. i issl. Bel. otd. VBO no. 7:142-148 '65. (MIRA 18:12)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826630007-9"

KROT, N.N.

75-13-3-3/27

AUTHORS: Smirnov-Averin, A. P., Krot, N. N., Sokolov, A. B.

TITLE: The Removal of Ethylenediaminetetraacetic Acid From Solutions by Oxidation (Udaleniye etilendiamintetrauksusnoy kisloty iz rastvorov okisleniyem)

PERIODICAL: Zhurnal analiticheskoy khimii, 1958, Vol 13, Nr 3, pp 280-283 (USSR)

ABSTRACT: Ethylenediaminetetraacetic acid (complexon II) and its disodium salt (complexon III) are very frequently used in analytical chemistry and in chemical industry (Refs 1-17). In the performance of analyses it is sometimes necessary to remove the complexons from the solution to be analyzed. For this purpose the oxidative destruction is most suitable. The investigation of the oxidation of the complexons is of interest, as oxidizing agents may be present in the solutions to be analyzed. Only the destruction of ethylenediaminetetraacetic acid by chlorates in a hydrochloric solution on heating (Ref 18) and the reaction of the same compound with hydrogen peroxide in the cold (Ref 19) were described in publications. In the present work the authors investigated the oxidation of ethylenediaminetetraacetic acid by nitric acid, nitrous acid and ammonium persulfate. Complexon II in the cold is only very

Card 1/3

The Removal of Ethylenediaminetetraacetic Acid From Solutions 75 13-3 3/27
by Oxidation

slowly oxidized by nitric acid. On heating, the oxidation takes place considerably faster, but a complete destruction is not attained by long boiling with 4n-HNO_3 either. In neutral solutions complexon II is not attacked in the cold by potassium nitrate even at very high concentrations of the latter; in the heat the oxidation only takes place very slowly. Nitric acid is therefore not suitable for the quantitative destruction of complexon II. The nitrate ion does not disturb the complexometric titrations in boiling solutions either, as these titrations are carried out rapidly and in weak acidity. Nitrous acid oxidizes complexon II more strongly than nitric acid. By adding sodium nitrite in small portions to a boiling nitric acid solution of ethylenediaminetetraacetic acid its complete oxidation can be attained. When all $NaNO_2$ is added at once, no quantitative destruction occurs, as the nitrite is rapidly decomposed under the formation of nitric oxides. Ammonium persulfate very rapidly oxidizes complexon II in a weakly acid solution at boiling temperature. The authors worked out a method for the rapid and quantitative destruction of complexon II by oxidation with ammonium persulfate in a nitric acid solution. As the sulfate ion produced in this reaction sometimes

Card 2/3

The Removal of Ethylenediaminetetraacetic Acid From Solutions 75-13-3-3/27
by Oxidation

disturbs the further course of analysis, a second method was also worked out which is based on the oxidation with sodium nitrite in a nitric acid solution. All performed investigations as well as the two working prescriptions are described in detail. There are 4 tables and 23 references, 5 of which are Soviet.

SUBMITTED: February 12, 1957

1. Ethyleneamines--Oxidation

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SOV/75-14-3-17/29

5(2)
AUTHORS: Krot, N. N., Smirnov-Averin, A. P., Kozlov, A. G.

TITLE: Spectrophotometric Determination of Magnesium in Uranium (Spektrofotometricheskoye opredeleniye magniya v urane)

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 3, pp 352-355 (USSR)

ABSTRACT: After checking the stability of the solutions of eriochrome black T and its complex formation with magnesium, and after the determination of the optical density of the magnesium complex in the spectrum range of from 500 - 550 mμ eriochrome black T is recommended for the determination of magnesium also in the presence of uranium. Uranium is precipitated at pH ~ 5 with oxy-quinoline. The method permits a determination of 0.005% Mg in uranium with a maximum relative error of ±3%. The complex compound between magnesium and eriochrome black T was investigated and a molecular ratio of 1 : 2 was determined. There are 3 figures, 1 table, and 10 references, 3 of which are Soviet.

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S/078/60/005/009/024/040/XX
B017/B058

AUTHORS: Kozlov, A. G. and Krot, N. N.

TITLE: Spectrophotometric Study of the Complex Formation of the Uranyl Ion With Ethylene Diamine Tetraacetic Acid

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 9, pp. 1959 - 1963

TEXT: The complex formation of the uranyl ion with ethylene diamine tetraacetic acid (EDTA) as a function of the pH of the solution and at different ratios of the components was investigated by spectrophotometric determinations. The absorption spectra of the complexes are shown in Figs. 1 and 2. It follows from the results that acid salt UO_2H_2Y develops at pH = 2. Partial hydrolysis sets in by increasing the ratio U : Y of the components and the pH of the solution. The following complex compounds were found and isolated in solid state:

Spectrophotometric Study of the Complex Formation of the Uranyl Ion With Ethylene Diamine Tetraacetic Acid

S/078/60/005/009/024/040/XX
B017/B058

UO_2H_2Y, $\left[(UO_2)_2Y\right]$ and $\left[UO_2Y\right]^{2-}$. The complex $K_2\left[UO_2Y\right]nH_2O$ was isolated in solid state by adding an excess of ethyl alcohol to the concentrated solution at pH = 5.5. The instability constant of the complex $\left[(UO_2)_2Y\right]$ is $K_1 = (6.7 \pm 2.8).10^{-16}$, and that of the complex $\left[UO_2Y\right]^{2-}$ is $K_2 = (5.2 \pm 2.4).10^{-11}$. The complexes of the uranyl ion with EDTA are less stable than those with nitrile triacetic acid and those of other bivalent metals with EDTA. The authors mention a paper by N. P. Komar'. There are 2 figures, 2 tables, and 17 references: 1 Soviet, 6 US, 2 British, 3 Czechoslovakian, 1 Danish, 1 French, and 3 German.

SUBMITTED: June 17, 1959

Card 2/2

81744

S/089/60/008/05/03/008
B006/B056

21.1320

AUTHORS: Smirnov-Averin, A. P., Galkov, V. I., Sevast'yanov, Yu. G., Krot, N. N., Ivanov, V. I., Sheynker, I. G., Stabenova, L. A., Kir'yanov, B. S., Kozlov, A. G.

TITLE: Investigation of a Used Fuel Element of the First Nuclear Power Station

PERIODICAL: Atomnaya energiya, 1960, Vol. 8, No. 5, pp. 446 - 447

TEXT: In the present paper the authors give a report on investigations of the isotope composition, the burnup and the state of the shells of used fuel elements of the Pervaya atomnaya elektrostantsiya (First Nuclear Power Station) of the Soviet Union. The fuel elements investigated had been in operation for 1160 days. Carrying out of the remote investigations is briefly described. A thin oxide film was found on the outer shells, but no damage was observed. The outer diameter was measured by means of a remote micrometer at various places, and certain deformations were found. Averaged over the entire length of the element an increase of the diameter from 14.11 ± 0.02 to 14.20 ± 0.02 mm was found. An investigation

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of the inner shell showed that it had a brown deposit (about 1μ thick), which was identified as an incrustation (and not as a corrosion product of steel). The burnup was determined according to the Cs^{137}-activity, which was separated chromatographically by the sample from the element; this isotope was especially well suited because of its long half-life. Fig. 1 shows the course of burnup along the element (from bottom to top). The mean burnup amounted to 12.5%. In the case of samples which were taken at a distance of 95 cm from the lower end of the element (range of maximum burnup), the burnup was determined mass-spectrometrically. The uranium content in these samples was 4.32%, which corresponds to a burnup of 16.1%. Fig. 2 shows the distribution of the entire α-, β-, and γ-activities along the element (from bottom to top). The transuranium-isotope content was determined according to the alpha spectra and the number of spontaneous fissions. Fig. 3 shows the distribution of the isotopes Pu^{240}, Pu^{239}, and Pu^{238}, and Am^{241} along the fuel element. The $Pu^{238,239,240,241}$ and Am^{241} content is given in a Table ($2.54 \cdot 10^{-4}$, 1.20, 0.102, $1.27 \cdot 10^{-2}$, $1.86 \cdot 10^{-3}$) and is compared with several theoretical

Investigation of a Used Fuel Element of the First Nuclear Power Station

data. The authors finally thank G. M. Kukavadze and R. N. Ivanov for the mass-spectroscopic analysis of the irradiated uranium, and V. N. Sharapov for calculating the isotope composition. There are 3 figures, 1 table, and 2 references: 1 Soviet and 1 American.

SUBMITTED: January 28, 1960

Card 3/3

3

26366
S/089/61/011/002/002/015
B102/B201

21,2200

AUTHORS: Smirnov-Averin, A. P., Galkov, V. I., Ivanov, V. I., Meshcheryakov, V. P., Sheynker, I. G., Stabenova, L. A., Krot, N. N., Kozlov, A. G.

TITLE: Study of a used fuel rod from the First Nuclear Power Station

PERIODICAL: Atomnaya energiya, v. 11, no. 2, 1961, 122-125

TEXT: This is the second part of a paper, the first having been published in "Atomnaya energiya" v. 8, no. 5, 1960, 446. Results of studies of used fuel rods from the Pervaya atomnaya elektrostantsiya (First Nuclear Power Station) are presented. The element jackets displayed no changes apart from some oxide stains. A comparison between the diameters of a new fuel rod with one after 104 and another after 445 effective burning hours showed that while the diameter had not increased at the upper and loser rod ends, it had grown by less than 0.2 mm in the middle. In order to measure the total α-, β-, and γ-activity, the used fuel rod was divided lengthwise into 10 sections, and each of these parts was dissolved in nitric acid. The α-activity was determined by a Pa-49 (Da-49) standard device and an ionization chamber, the

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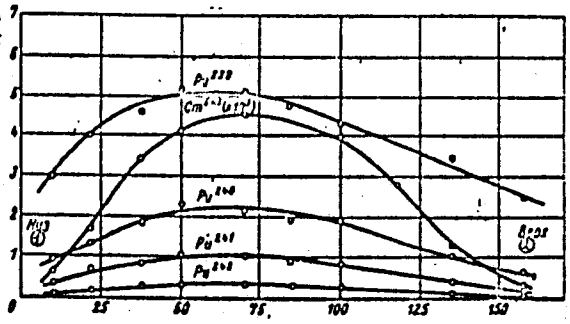
β-activity by a 4π-counter, the γ-activity by an ionization chamber as compared to a radium standard. The activity of the inner and outer tubes bounding the fuel element was also measured; these tubes were made of stainless steel. In the middle, the activity of the outer tube was 30% higher than that of the inner tube. This effect can be explained by the change of the neutron spectrum along the diameter of the fuel element. The burn-up in the used fuel elements was determined on the strength of the absolute activity of cesium which was separated by an ion exchanger. The results of a radiometric determination of the burn-up were compared with mass-spectrometric results, and agreement was found to be good. The mean burn-up of the entire element was found to be equal to 5%. Finally, the isotopic composition of transuranic elements was also determined in the used-up fuel. The first part of the present paper has supplied the results of a radiometric determination of the isotopic composition in case of a 12.5% burn-up of the element. The results of a mass-spectrometric analysis are now given. The substance under investigation was to the emitter (tungsten foil, 40 μ) in the form of an aqueous nitrate solution. A thermal ion source served for the purpose. Results are presented in Fig. 5. They were used to calculate the mean values of isotopic composition. The

Study of a used fuel rod from the ...

following was found (in kg/ton of uranium): Pu^{239} - 4.10; Pu^{240} - 1.53; Pu^{241} - 0.64; Pu^{242} - 0.20; Cm^{242} - $2.73 \cdot 10^{-3}$. There are 5 figures and 2 Soviet-bloc references.

SUBMITTED: September 13, 1960

Fig. 5: Isotopic composition of transuranic elements along the fuel element. Legend: Ordinate: isotopic concentration in kg/ton of U; abscissa: length in cm; (1) bottom; (2) top.



Card 3/3

S/186/62/004/006/006/009
E075/E436

AUTHORS: Yermolayev, N.P., Krot, N.N.

TITLE: Some data on the behaviour of uranium (IV) in nitric acid solutions

PERIODICAL: Radiokhimiya, v.4, no.6, 1962, 678-685

TEXT: The authors investigated the complex formation of $U^{(IV)}$ with NO_3^- using spectroscopic and ion-exchange methods as there are no data available on this subject. The complex formation takes place at HNO_3 concentrations ranging from 0 to 10 M and gives a series of absorption maxima, the maximum difference between the molar extinction coefficients of U^{4+} and its nitrate complexes occurring at 648 mμ. All measurements were carried out at this wavelength. In HCl and HNO_3 solutions of $U^{(IV)}$ the light absorption remains constant at the H concentration of 2 to 4 g·ion/litre, but decreases at $[H^+] < 2M$ due to hydrolysis of U^{4+} to UOH^{3+}. $U^{(IV)}$ is not stable in HNO_3 even in inert atmospheres. It oxidizes, the process being catalysed by the products of reduction of NO_3^- to NO_2, N_2O_4 and NO. The $U^{(IV)}$ solutions become stable when these products are removed by amino-aromatic derivatives,

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Some data on the behaviour ...

such as anthranilic acid. The latter was used as a stabilizer during the determination of stability constants of the nitrate complexes. The complexes forming in 0 to 3 M HNO_3 solutions were studied in more detail. The optical density of the solutions containing 9.78×10^{-3} M $U^{(IV)}$ was determined at 26.5°C at the ionic strengths μ of 2.0, 2.5, 3.0 and 3.5. There is a gradual formation of four complexes UNO_3^{3+}, $U(NO_3)_2^{2+}$, $U(NO_3)_3^{+}$ and $U(NO_3)_4$, the stability constants for these being given by

$$K_i = \frac{\left[U(NO_3)_i^{4-i}\right]}{\left[U^{4+}\right]\left[NO_3^-\right]^i} \quad (i = 1, 2, 3 \text{ and } 4)$$

The values of K determined by the spectrophotometric method agreed with those estimated from the sorption of $U^{(IV)}$ on ion-exchanger KU-2 (KU-2). The former values are given in Table 2, ε_1 being the molar extinction coefficients. There are 4 figures and 4 tables.

SUBMITTED: September 2, 1961

Card 2/3

GEL'MAN, A.D.; KROT, N.N.; YERMOLAYEV, N.P.

Some data on the preparation and properties of complex uranium (IV) nitrates. Zhur.neorg.khim. 7 no.9:2034-2044 S '62. (MIRA 15:9)

1. Institut fizicheskoy khimii AN SSSR.
(Uranyl nitrate)

KROT, N.N.; YERMOLAYEV, N.P.; GEL'MAN, A.D.

Behavior of ethylenediaminetetraacetic acid in acid solutions and its reaction with uranium (IV). Zhur.neorg.khim. 7 no.9:2054-2060 S '62. (MIRA 15:9)

1. Institut fizicheskoy khimii AN SSSR.
(Acetic acid) (Uranium compounds)

S/020/62/144/003/018/030
B119/B101

AUTHORS: Gel'man, A. D., Krot, N. N., and Yermolayev, N. P.

TITLE: Production and properties of complex nitrate compounds of quadrivalent uranium

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 3, 1962, 562-564

TEXT: U^{4+} nitrate complexes were produced in perchloric acid - nitric acid mixtures and hydrochloric acid - nitric acid mixtures of different concentrations. Small amounts of aromatic amines were added to stabilize the quadrivalent form of uranium. The resulting compounds were investigated by spectrophotometry and ion exchange. With HNO_3 contents up to 3 N in the initial mixture, UNO_3^{3+}, $U(NO_3)_2^{2+}$, $U(NO_3)_3^{+}$, and $U(NO_3)_4$ are mainly formed. The stability constants of the complexes increase with the ion intensity. They are 1.58, 1.48, 0.96, 0.35 with the ion intensity 2.0, and 2.29, 2.95, 2.62, 1.51 with the ion intensity 3.5, in that order. With more than 3 N HNO_3 in the initial mixture, the ion $[U(NO_3)_6]^{2-}$ is formed.

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S/020/62/144/003/018/030
B119/B101

Production and properties of....

The salts which this formed with Cs^+, Rb^+, K^+, NH_4^+, Zn^{2+}, Mg^{2+}, pyridinium ion, aminopyridinium ion, quinolinium ion, and α, α' - - dipyridylium ion were isolated. The crystalline compounds are colored dark-green to green-gray. They are soluble in water and in dilute HNO_3, $[U(NO_3)_6]^{2-}$ decomposing into NO_3^- and one of the above-mentioned lower complex forms. The solubility of the salts decreases with increasing ion radius of the cation. They are insoluble in benzene, chloroform, and carbon tetrachloride. The salts of K, Mg, and Zn are soluble in diethyl ether. When stored in solid state, the salts decompose gradually owing to intramolecular oxidation of U^{4+}. There is 1 table.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

PRESENTED: January 22, 1962, by V. I. Spitsin, Academician

SUBMITTED: January 10, 1962

Card 2/2

SMIRNOV-AVERIN, A.P.; KOVALENKO, G.S.; KROT, N.N.

Extraction of uranium (IV) from nitric acid media by tri-n-butyl phosphate. Zhur. neorg. khim. 8 no.10:2400-2406 '63.
(MIRA 16:10)

(Uranium compounds) (Nitric acid) (Butyl phosphates)

YERMOLAYEV, N.P.; KHOT, N.N.

Complex formation of uranium (IV) with ethylenediaminetetra-acetic acid. Zhur. neorg. khim. 8 no.11:2447-2460 N '63. (MIRA 17:1)

ACCESSION NR: AP4041447 S/0089/64/016/006/0497/0500

AUTHORS: Ivanov, V. I.; Krot, N. N.; Smirenkin, G. N.

TITLE: Distribution of the ratio of the radiative-capture and fission cross sections for Pu-239 over the height of the BR-5 reactor

SOURCE: Atomnaya energiya, v. 16, no. 6, 1964, 497-500

TOPIC TAGS: neutron capture, capture cross section, fission cross section, breeder reactor, neutron flux neutron spectrum

ABSTRACT: This research was undertaken because of the interest that attaches to a knowledge of the cross-section ratio for the determination of the breeding ratio, for the choice and averaging of the microscopic constants, and for reactor design in general. The distribution of the neutron-capture reactions was measured by determining the Pu^{240} concentration from the rate of spontaneous fis-

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ACCESSION NR: AP4041447

sion in plutonium samples irradiated in a reactor with integral flux 10^{21}--10^{22} neut/cm^2. The initial material for the irradiation was Pu^{239} of almost isotopic purity (containing $\approx 5 \times 10^{-3}$% Pu^{240}). The distribution of the Pu^{239} fission in the reactor was measured by two methods -- with the aid of a fission chamber and by determining the activity of the fission products from the irradiated samples. The Pu^{239} capture cross section could be determined from the Pu^{240} concentration and the integral neutron flux. The values obtained for the ratio of the radiative capture to fission cross section (α) increase from 0.1 to 0.8 with increasing distance from the reactor center. Data corresponding to the equilibrium spectra of the neutrons in the active zone and in the outer region of the reflector agree with the measured capture and fission cross sections for monoenergetic neutrons. When group calculation is used, the values agree with the calculated ones only for the active zone, with noticeable discrepancies in the reflector. "This work was performed under the general guidance of I. I. Bondarenko and A. P.

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ACCESSION NR: AP4041447

Smirnov-Averin, to whom the authors are grateful. They also thank A. I. Leypunskiy and O. D. Kazachkovskiy for interest in the work, V. I. Galkov for participating in individual stages of the work, Yu. A. Blyumkina for preparing the electronic apparatus, and the hot-laboratory and reactor crew for help with the experiment." Orig. art. has: 1 figure and 1 table.

ASSOCIATION: None

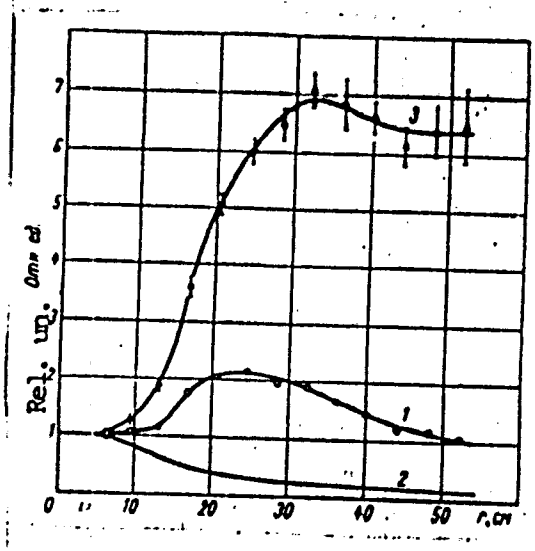
SUBMITTED: 18Apr63 ENCL: 02

SUB CODE: NP NR REF SOV: 008 OTHER: 005

Card 3/5

ACCESSION NR: AP4041447

ENCLOSURE: 01



Distribution of the neutron radiative capture (1), fissions, and $\alpha = \sigma_\gamma / \sigma_f$ for Pu^{239} (3) as functions of the distance from the center of the reactor.

The reaction rate and the value of for r = 4.7 cm atre taken as unity

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ACCESSION NR: AP4041447

ENCLOSURE: 02

Summary table of the obtained experimental data

Distance to cent. plane, cm	Distance to reactor cent. cm	Pu-240 content, %*	Relative number of cantures	Relative number of fissions	Distribution, a	a
0	4,7	0,235±0,008	1,00	1,00	1,00	0,11 ±0,01
4	8,2	0,234±0,010	0,99±0,04	0,905±0,030	1,04±0,05	0,115±0,010
8	9,3	0,252±0,010	1,07±0,07	0,840±0,025	1,28±0,10	0,14±0,015
12	12,9	0,268±0,012	1,14±0,04	0,650±0,020	1,76±0,09	0,195±0,015
16	16,7	0,413±0,018	1,76±0,06	0,492±0,015	3,58±0,17	0,395±0,035
20	20,5	0,483±0,017	2,06±0,06	0,408±0,012	5,05±0,21	0,555±0,045
24	24,4	0,500±0,019	2,16±0,07	0,333±0,010	6,50±0,27	0,715±0,06
28	28,3	0,460±0,017	1,96±0,06	0,282±0,008	6,95±0,30	0,765±0,065
32	32,2	0,448±0,016	1,90±0,05	0,252±0,007	7,50±0,31	0,83±0,075
36	36,1	0,390±0,024	1,66±0,10	0,228±0,007	7,35±0,50	0,81±0,08
40	40,0	0,342±0,012	1,40±0,04	0,204±0,006	7,14±0,28	0,785±0,07
44	[illegible],0	0,284±0,015	1,21±0,06	0,182±0,005	6,65±0,38	0,73±0,07
48	48,0	0,275±0,018	1,17±0,07	0,170±0,005	6,90±0,47	0,765±0,06
52	52,0	0,250±0,020	1,06±0,11	0,152±0,005	7,00±0,75	0,77±0,10

*After subtracting the Pu-240 concentration in the initial material and with allowance for the Pu-239 burnup due to fission

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